

AMENDMENTS TO THE CLAIMS

In the claims:

1. (currently amended): A process to produce a purified carboxylic acid product, said process comprising:
 - (a) removing impurities from a crystallized product in a solid liquid displacement zone to form a purified carboxylic acid slurry; wherein said purified carboxylic acid slurry has a b* of less than 3.5; wherein said purified carboxylic acid slurry is formed without a hydrogenation step; wherein said impurities comprise 4-carboxybenzaldehyde, trimellitic acid, or 2,6-dicarboxyfluorenone; wherein said solid liquid displacement zone comprises a solid liquid separator that is operated at a temperature between 110°C and 200°C;
 - (b) cooling said purified carboxylic acid slurry in a cooling zone to form a cooled purified carboxylic acid slurry; and
 - (c) filtering and drying said cooled purified carboxylic slurry in a filtration and drying zone to remove a portion of the solvent from said cooled carboxylic acid slurry to produce said purified carboxylic acid product.
2. (canceled)
3. (currently amended): The process according to claim 1 wherein said solid liquid displacement zone comprises a solid liquid separator that is operated at a temperature between about 120°C to about 180°C.

4. (currently amended): The process according to claim 1 wherein said solid liquid displacement zone comprises a solid liquid separator that is operated at a temperature between about 140°C to about 160°C.
5. (original): The process according to claim 1 wherein said solid liquid displacement zone comprises a decanter centrifuge.
6. (original): The process according to claim 1 wherein said solid liquid displacement zone comprises a solid liquid separator selected from the group consisting of a belt filter, a rotary vacuum filter and a rotary disk pack centrifuge.
7. (currently amended): The process according to claim 1 wherein said solid liquid displacement zone separator is operated at a pressure of less than about 70 psia.
8. (original): The process according to claim 1 wherein said solid liquid displacement zone is operated in continuous mode.
9. (original): The process according to claim 1 wherein said purified carboxylic acid slurry is formed without a process for separating impurities from oxidation solvent or hydrogenation step.
10. (original): The process according to claim 1 wherein said purified carboxylic acid slurry has a b* of less than 3.
11. (currently amended): A process to produce a purified carboxylic acid product said process comprising:
 - (a) removing in a solid liquid displacement zone impurities from a crystallized product to form a purified carboxylic acid slurry; wherein said solid liquid displacement zone comprises a solid liquid separator that is operated at a

temperature between about 140°C to about 160°C; wherein said solid liquid separator is operated in a continuous mode; wherein said solid liquid separator is operated at a pressure less than 70 psia; wherein said purified carboxylic acid slurry has a b* of less than 3.5; wherein said impurities comprise 4-carboxybenzaldehyde, trimellitic acid, or 2,6-dicarboxyfluorenone;

- (b) cooling said purified carboxylic acid slurry in a cooling zone to form a cooled purified carboxylic acid slurry; and
- (c) filtering and drying said cooled purified carboxylic slurry in a filtration and drying zone to remove a portion of the solvent from said cooled carboxylic acid slurry to produce said purified carboxylic acid product.

12. (original): The process according to claim 11 wherein said solid liquid separator is selected from a group consisting of a rotary disk pack centrifuge, belt filter, rotary vacuum filter, and a decanter centrifuge.
13. (original): The process according to claim 11 wherein said purified carboxylic acid slurry is formed without an impurity removal process or a hydrogenation step.
14. (original): The process according to claim 11 wherein said purified carboxylic acid slurry has a b* of less than 3.
15. (currently amended): A process to produce a purified carboxylic acid product said process comprising:
 - (a) optionally removing impurities from a crude carboxylic acid slurry in an optional solid liquid displacement zone to form a slurry product;
 - (b) oxidizing said slurry product or said crude carboxylic acid slurry in a staged oxidation zone to form a staged oxidation product;

- (c) crystallizing said staged oxidation product in a crystallization zone to form a crystallized product;
- (d) removing in a solid liquid displacement zone impurities from said crystallized product to form a purified carboxylic acid slurry; wherein said impurities comprise 4-carboxybenzaldehyde, trimellitic acid, or 2,6-dicarboxyfluorenone; wherein said solid liquid displacement zone comprises a solid liquid separator that is operated at a temperature between 110°C and 200°C;
- (e) cooling said purified carboxylic acid slurry in a cooling zone to form a cooled purified carboxylic acid slurry; and
- (f) filtering and drying said cooled purified carboxylic slurry in a filtration and drying zone to remove a portion of the solvent from said cooled carboxylic acid slurry to produce said purified carboxylic acid product.

16. (currently amended): A process to produce a purified carboxylic acid product said process comprising:

- (a) optionally, removing impurities from a crude carboxylic acid slurry in an optional solid liquid displacement zone to form a slurry product;
- (b) oxidizing said slurry product or crude carboxylic acid slurry in a staged oxidation zone to form a staged oxidation product;
- (c) removing in a solid liquid displacement zone impurities from said staged oxidation product to from a purified staged oxidation product; wherein said impurities comprise 4-carboxybenzaldehyde, trimellitic acid, or 2,6-dicarboxyfluorenone; wherein said solid liquid displacement zone comprises a

solid liquid separator that is operated at a temperature between 110°C and 200°C;

(d) crystallizing in a crystallization zone said purified staged oxidation product to form a purified carboxylic acid slurry;

(e) cooling said purified carboxylic acid slurry in a cooling zone to form a cooled purified carboxylic acid slurry; and

(f) filtering and drying said cooled purified carboxylic slurry in a filtration and drying zone to remove a portion of the solvent from said cooled carboxylic acid slurry to produce said purified carboxylic acid product.

17. (canceled)
18. (original): The process according to claim 15 or 16 wherein said crude carboxylic acid slurry comprising terephthalic acid, catalyst, acetic acid, and impurities is withdrawn at a temperature between about 110°C and about 200°C from the primary oxidation zone; wherein said catalyst comprises cobalt, manganese or bromine compounds.
19. (original): The process according to claim 15 or 16 wherein said solid liquid displacement zone comprises a solid liquid separator selected from the group consisting of a belt filter, a rotary vacuum filter and a rotary disk pack centrifuge.
20. (original): The process according to claim 15 or 16 wherein said purified slurry is formed without a process for separating impurities from oxidation solvent or hydrogenation step.

21. (original): The process according to claim 15 or 16 wherein said purified slurry has a b* of less than about 3.5.
22. (canceled)
23. (currently amended): A process to produce a purified carboxylic acid product comprising:
 - (a) removing in an optional solid liquid displacement zone impurities from a crude carboxylic acid slurry to form a slurry product; wherein said crude carboxylic acid slurry comprises terephthalic acid, catalyst, acetic acid, and impurities that is withdrawn at a temperature between about 140°C and about 170°C from the oxidation of paraxylene in a primary oxidation zone; wherein said catalyst comprises cobalt, manganese or bromine compounds;
 - (b) oxidizing said slurry product in a staged oxidation zone to form a staged oxidation product; wherein said oxidizing is conducted at a temperature between about 190°C to about 280 °C; and wherein said oxidizing is at a higher temperature in said staged oxidation zone than in said primary oxidation zone
 - (c) crystallizing said staged oxidation product in a crystallization zone to form a crystallized product; and
 - (d) removing in a solid liquid displacement zone impurities from said crystallized product to form said purified carboxylic acid slurry; wherein said solid liquid displacement zone comprises a solid liquid separator that is operated at a temperature between about 110 °C to about 200 °C; wherein

said impurities comprise 4-carboxybenzaldehyde, trimellitic acid, or 2,6-dicarboxyfluorenone;

(e) cooling said purified carboxylic acid slurry in a cooling zone to form a cooled purified carboxylic acid slurry; and

(f) filtering and drying said cooled purified carboxylic slurry in a filtration and drying zone to remove a portion of the solvent from said cooled carboxylic acid slurry to produce said purified carboxylic acid product.

24. (original): The process according to claim 15, 16, or 23 further comprising decolorizing in a reactor zone said purified carboxylic acid slurry or a carboxylic acid that has been esterified.
25. (currently amended): The process according to claim 24 wherein said decolorizing is accomplished by reacting said crude carboxylic acid solution with hydrogen in the presence of a catalyst in a reactor zone to produce a decolorized carboxylic acid solution; wherein said catalyst comprises a group VIII metal.
26. (original): The process according to claim 15, 16 or 23 wherein said solid liquid displacement zone comprises a solid liquid separator that is operated at a temperature between about 50 °C to about 200 °C.